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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,184	10/14/2003	Sunoj Koshy	14965US01	4204

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EXAMINER	
NEWAY, SAMUEL G	
ART UNIT	**PAPER NUMBER**
2626	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/685,184	KOSHY, SUNOJ	
	Examiner	Art Unit	
	Samuel G. Neway	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This is responsive to the Application filed on 14 October 2003.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 – 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsai et al ("Architecture Design for MPEG-2 AAC Filterbank Decoder Using Modified Regressive Method", Acoustics, Speech, and Signal Processing, 2002. Proceedings. (ICASSP '02). IEEE International Conference on Volume 3, 13-17 May 2002 Page(s):III-3216 - III-3219 vol.3).

Claim 1:

Tsai discloses a method for calculating pulse code modulated samples, said method comprising:

accessing an IMDCT sample from a previous set of IMDCT samples ("X(2k + 1)"); accessing an IMDCT sample from a present set of IMDCT samples ("X(2k)"); calculating a first pulse code modulated sample from the accessed IMDCT sample from the previous set of IMDCT samples and the accessed IMDCT sample from the present set of IMDCT samples; and calculating a second pulse code modulated sample from the

accessed IMDCT sample from the previous set of IMDCT samples and the accessed IMDCT sample from the present set of IMDCT samples (Figure 6 and related text).

Claim 2:

Tsai discloses the method of claim 1, wherein calculating the second pulse code modulated sample comprises inverting the accessed IMDCT sample from the present set of IMDCT samples (Figure 6 and related text).

Claim 3:

Tsai discloses the method of claim 1, further comprising: accessing a first inverse window coefficient; and accessing a second inverse window coefficient (Figure 6 and related text).

Claim 4:

Tsai discloses the method of claim 3, wherein calculating the first pulse code modulated sample further comprises: multiplying the accessed IMDCT sample from the previous set of IMDCT samples with the first inverse window coefficient; and multiplying the accessed IMDCT sample from the present set of IMDCT samples with the second inverse window coefficient (Figure 6 and related text).

Claim 5:

Tsai discloses the method of claim 4, wherein calculating the second pulse code modulated samples further comprises: accessing a third inverse window coefficient; and accessing a fourth inverse window coefficient (Figure 6 and related text).

Claim 6:

Tsai discloses the method of claim 5, further comprising: multiplying the accessed IMDCT sample from the previous set of IMDCT samples with a third inverse window coefficient; and multiplying the accessed IMDCT sample from the present set of IMDCT samples with a fourth inverse window coefficient (Figure 6 and related text).

Claim 7:

Tsai discloses a system for calculating pulse code modulated samples, said method comprising:

a first address register for accessing an IMDCT sample from a previous set of IMDCT samples ("X(2k + 1)"); a second address register for accessing an IMDCT sample from a present set of IMDCT samples ("X(2k)"); and an arithmetic logic unit for calculating a first pulse code modulated sample from the accessed IMDCT sample from the previous set of IMDCT samples and the accessed IMDCT sample from the present set of IMDCT samples and calculating a second pulse code modulated sample from the accessed IMDCT sample from the previous set of IMDCT samples and the accessed IMDCT sample from the present set of IMDCT samples (Figure 6 and related text).

Claims 8 – 14:

Claims 8 – 14 are similar in scope and content to claims 2 – 7 and are rejected with the same rationale.

Claim 15:

Tsai discloses a circuit for calculating PCM samples, said circuit comprising:

a processor for executing a plurality of executable instructions; an instruction memory for storing the plurality of executable instructions, wherein execution of the

executable instructions causes: accessing an IMDCT sample from a previous set of IMDCT samples from a first memory ("X(2k + 1)"); accessing an IMDCT sample from a present set of IMDCT samples from a second memory("X(2k)"); calculating a first pulse code modulated sample from the accessed IMDCT sample from the previous set of IMDCT samples and the accessed IMDCT sample from the present set of IMDCT samples; and calculating a second pulse code modulated sample from the accessed IMDCT sample from the previous set of IMDCT samples and the accessed IMDCT sample from the present set of IMDCT samples (Figure 6 and related text).

Claims 16 – 20:

Claims 16 – 20 are similar in scope and content to claims 2 – 7 and are rejected with the same rationale.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chen et al. (USPN 6,199,039) discloses an MPEG-II audio decoder with a synthesis sub band filter.

Tsai et al. (USPN 7,065,491) discloses an inverse-modified discrete cosine transform and overlap-add method and hardware structure for audio signal decoding.

Paik et al. ("Design of a novel synthesis filter for real-time MPEG-2 audio decoder implementation on a DSP chip", Consumer Electronics, IEEE

Transactions on Publication Date: Nov 1999) discloses a synthesis filter for an MPEG-II audio decoder taking advantage of the IMDCT's symmetries.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel G. Neway whose telephone number is 571-270-1058. The examiner can normally be reached on Monday - Friday 8:30AM - 5:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SN

SN

DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER